

CLAIMS

1. A measuring instrument comprising a channel for moving a sample liquid containing a solid component and for providing a liquid reaction field, and a first and second electrode which are used to apply voltage to the liquid reaction field, wherein the first electrode comprises an electron transfer interface for providing electrons to the liquid reaction field or receiving electrons from the reaction field when voltage is applied to the liquid reaction field via the first and second electrodes, the measuring instrument comprising concentration means for increasing the concentration of solid components in that part which contacts the electron transfer interface in the liquid reaction field.

2. The measuring instrument according to Claim 1, wherein the concentration means comprises a water-absorbing layer containing an absorbent polymer material.

3. The measuring instrument according to Claim 2 wherein the absorbent polymer material comprises a water absorption power of 10 to 500 g/g.

4. The measuring instrument according to Claim 2, comprising a substrate on which are formed the first and second electrodes and a cover laid over this substrate.

5. The measuring instrument according to Claim 4, wherein the water-absorbing layer is formed as a film on

at least that part of the cover which faces the electron transfer interface.

6. The measuring instrument according to Claim 5, wherein the dimension of the water-absorbing layer in the thickness direction of the substrate without water absorption and with water absorption is $1/30$ to $1/10$ and $1/5$ to $3/5$, respectively, of the dimension of the channel in the thickness direction.

7. The measuring instrument according to Claim 4, wherein the water-absorbing layer is formed across all or most of the length of the channel.

8. The measuring instrument according to Claim 7, wherein the water-absorbing layer is formed by the cover by forming the cover so as to include the absorbent polymer material.

9. The measuring instrument according to Claim 4, wherein the water-absorbing layer has a construction wherein a powder comprising the absorbent polymer material is supported on the cover.

10. The measuring instrument according to Claim 9, wherein the weight average grain size of the powder is 100 to $1000\text{ }\mu\text{m}$ without water absorption.

11. The measuring instrument according to Claim 2, wherein the water-absorbing layer is provided downstream

in the direction of flow of the sample liquid from the electron transfer interface in the channel.

12. The measuring instrument according to Claim 11, wherein the dimension of the water-absorbing layer in the direction of flow of the sample liquid is set at $1/4$ to $1/2$ of the distance from the channel inlet to the furthest downstream point of the electron transfer interface in the direction of flow of the sample fluid.

13. The measuring instrument according to Claim 11, wherein the water-absorbing layer is formed so that the thickness dimension of the part of the channel in which the water-absorbing layer is formed is 0 to 15 μm with water absorption.

14. The measuring instrument according to Claim 4, wherein the water-absorbing layer has a part formed in at least one of a location upstream from and adjacent to the electron transfer interface and a location downstream from and adjacent to the electron transfer interface.

15. The measuring instrument according to Claim 14, wherein the water-absorbing layer has a part formed in a location upstream from and adjacent to the electron transfer interface and a part formed in a location downstream from and adjacent to the electron transfer interface.

16. The measuring instrument according to Claim 15, wherein the water-absorbing layer surrounds the electron transfer layer.

17. The measuring instrument according to Claim 1, wherein the concentration means is formed by an absorption-resistant dam placed downstream in the channel from the electron transfer interface in the direction of movement of the sample liquid which impedes the movement of the solid components.

18. The measuring instrument according to Claim 17, wherein the dam is formed so that the thickness dimension of that part of the channel in which the dam is formed is 5 to 15 μm .

19. The measuring instrument according to Claim 1 wherein the sample liquid is blood containing blood cells.